
IV. *An Account of an Experiment, touching the Production of Light within a Globe Glaſs, whoſe inward Surface is lin'd with Sealing-Wax, upon an Attrition of its outſide.* *By Mr.* Fr. Hauksbee; *F. R. S.*

THE ſeeming Congruity that appears to be between Sealing-Wax and Glaſs, in ſeveral Experiments already made in relation to Light and Electricity, producible on the Attrition of them, has already been taken notice of: And for a farther Confirmation of their agreeableneſs, take the following Experiment.

I took a Globe Glaſs about ſix Inches Diameter, into which when I had put a convenient quantity of broken Sealing-Wax, I held it over a moderate Fire, and continu'd ſo to do, till the Wax was melted; then turning it about from part to part, it ſoon had got a pretty thick Lining of it, (eſpecially ſome parts, for I could not make it all alike) on more than half its inſide: Thus placing it in a convenient Poſture, I left it till it was perfectly cold. When (being Evening) after having fixt the Braſs-work to it, I cauſed it to be exhauſted of its Air; then fixing it on the Machine, to give Motion to it as uſual, I no ſooner held my Hand on that part of it, under which it was lin'd with the premention'd Wax, but the Figure of the Parts that touch'd it, was as viſible on the inward Surface of the Sealing-Wax, as when the Glaſs alone is us'd for that purpoſe: The Sealing-Wax, where it is ſpread thinneſt on the Glaſs, one can but juſt diſcern the Light of a Candle thro' it in the Dark; but ſome Parts are ſo cover'd with it, that it is at leaſt one eighth part.

part of an Inch in thickneſs; and even on thoſe Parts, for ought that I could diſcover, the Light and Figure appeared, as vivid, and diſtinguiſhible, as any where elſe. The Light produc'd, is not at all diſcernible thro' the Body of the Wax, but only to be look'd upon thro' the tranſparent part of the Glaſs: and notwithſtanding ſome parts of the Sealing-Wax did not adhere ſo cloſe to the Glaſs, as others, yet the Light appeared on thoſe parts as on the other. Now whether the Light produced on the Sealing-Wax, was from the *Effluvia* provokt by the Attrition of the ſurrounding Body of Glaſs, or from its own diſpoſition ſo to do in ſuch a Medium, I cannot determine; it being of the ſame colour and likeneſs to that of Glaſs, in all reſpects, except, that upon a ſmall quantity of Air being let into the Receiver, the Light wholly diſappear'd in that part lin'd with the Wax, and not in the other. I farther obſerved, when all the Air was let in, that the Hoop of Threads being held over the Glaſs, the Threads would be attracted at a larger diſtance, from that part of it lin'd with the Wax, than the other; which ſeems to me to proceed from the United Strength of both their *Effluvia*.

Upon a Repetition of this Experiment, I obſerved, that the Wax within the Glaſs would attract Bodies approach'd near its outſide, and that even in *Vacuo* (which is a Diſcovery that I never could make from any other Body, in ſuch a Medium, except the Magnet.) For holding the Hoop of Threads over it, while it was in that State, the Threads would be directed, but not with that Vigour as when all the Air was let in; yet here was that ſenſible difference, that when the Threads were held over that part of the Glaſs free from the lining of Wax, the Threads would not be attracted, but approaching them within the reach of the *Effluvia* of the Wax, they would eagerly fly towards it. Hence it ſeems deducible, that the Figure of the Parts of Glaſs and Sealing-

Wax, are much alike, otherwiſe I cannot conceive how the *Effluvia* of one can penetrate and paſs with ſuch eaſe the Body of the other, and there to act as if it was one and the ſame with it.

V. *An Account of ſome Experiments, in relation to the Weight of Common Water under different Circumſtances. By Mr.* Fr. Hauksbee, *F. R. S.*

FIrſt, I took a Glaſs of Common Water, and having weigh'd nicely a Glaſs-Bottle in it, whoſe Bulk was equal to the Bulk of 575 Grains of the ſame Fluid; then I caus'd ſome of the ſame Water to be boyl'd over the Fire, and after that, it was included in *Vacuo*, and there remained till it became of the ſame Temperature (as to coolneſs) with common Water. Thus to the utmoſt of my power, I endeavour'd to extricate all the Air out of the Water, thinking in that State it would become more denſe than when I weigh'd my Bottle firſt in't; but contrary to my Expectation, I found that the Bottle had juſt the ſame weight in it, as before, which ſeems to confirm the impoſſibility to compreſs Water by force into a leſſer ſpace than it naturally poſſeſſes; for if upon the removal of ſuch a quantity of Air from out of its Body, the Parts do not ſlide any cloſer together, how ſhould a Weight laid upon its Surface, when its Interſtices ſeem to be replete with Air, make any impreſſion on it. The Body which was forc'd out of the Water by the prementioned means, I call Air, ſince, for any thing to the contrary that I can diſcover, it is ſubject to all the ſame Laws with it; but that the Water upon its